Name:

p1105: Factoring when $a = 1$ (v19)

Example: Factor $x^2 + 5x - 24$

Find two numbers whose product is -24 and whose sum is 5. Focus on finding factor pairs of -24. Eventually you consider 8 and -3 because $(8)(-3) = -24$. You verify this pair is correct because $(8) + (-3) = 5$. Thus, your answer:

$$(x + 8)(x - 3)$$

1. Factor $x^2 - 5x + 6$

   $(x - 3)(x - 2)$

2. Factor $x^2 + 2x - 24$

   $(x + 6)(x - 4)$

3. Factor $x^2 + 2x - 15$

   $(x + 5)(x - 3)$

4. Factor $x^2 - 12x + 36$

   $(x - 6)(x - 6)$

5. Factor $x^2 - 8x - 9$

   $(x - 9)(x + 1)$

6. Factor $x^2 + 2x - 8$

   $(x - 2)(x + 4)$

7. Factor $x^2 - 9$

   $(x + 3)(x - 3)$

8. Factor $x^2 + 12x + 35$

$(x + 5)(x + 7)$

9. Factor $x^2 - 8x + 15$

$(x - 5)(x - 3)$

10. Factor $x^2 + 14x + 48$

$(x + 8)(x + 6)$

11. Factor $x^2 - 9x + 20$

$(x - 5)(x - 4)$

12. Factor $x^2 - 16$

$(x - 4)(x + 4)$

13. Factor $x^2 + x - 30$

$(x - 5)(x + 6)$

14. Factor $x^2 + 12x + 27$

$(x + 3)(x + 9)$

15. Factor $x^2 - 15x + 54$

$(x - 6)(x - 9)$